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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WONG, ALLEN C	

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2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/775,156	HARUMOTO ET AL.	
	Examiner	Art Unit	
	Allen Wong	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/666,102.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/11/04, 11/1/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/666,102, filed on 9/20/00.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 2/11/04 and 11/1/05 has been considered by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 21, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imahashi (6,438,317) in view of Wang (6,167,084).

Regarding claims 21, 24 and 25, Imahashi discloses a system stream creating method, computer-readable record medium recording a program, and apparatus for creating a system stream, the system stream being a sequence of fixed-length packs, the system stream creating apparatus comprising:

a video encoding unit operable to generate picture data and having generated a last piece of picture data of a GOP (col.8, ln.24-32; fig.1, element 16 is a video encoder,

in accordance with the MPEG standard that incorporates the production of GOP or group of pictures, and including a last piece of picture data of a GOP, since a GOP contains a plurality of frames that can include the beginning and last piece(s) or frame(s), and that since the last frame of a GOP can be considered the last piece of picture data, for generating encoded stream or a video elementary stream, see fig.6 and col.18, ln.31-36, and note the coding syntax that includes the group of pictures (GOP) header); and

a stream data transfer unit operable to store the picture data and the next start codes generated by the video encoding unit into a fixed-length pack (col.8, ln.51-59; the packetizer 19 is used for storing the video picture data or the next start codes generated by video encoding unit 16 into a fixed length pack, further, the stream is then transported to the mux 22 as shown in fig.1 for forming into a system stream that multiplexes video, audio, and other auxiliary data together in preparation for data transfer; also, in fig.6 and note that the "next_start_code" are generated for generating an encoded stream).

Imahashi does not specifically disclose the limitation of calculate remaining space of a pack storing the last piece of picture data, based on (i) a total amount of additional data used for multiplexing the GOP into the system stream, each piece of the additional data being included in each pack that contains a portion of the GOP, and (ii) a total amount of picture data contained in the GOP, and generate as many next start codes as correspond to the remaining space of the pack which stores the last piece of picture data. However, Wang discloses the teaching of calculate remaining space of a

pack storing the last piece of picture data (col.12, ln.57 to col.13, ln.19, Wang discloses the remaining number of target bits Tr = Tr + T, where the Tr on the left side of the equation is the current number of bits remaining, and Tr on the right side of the equation is the number of bits left from previous GOP, and T is the number of bits for new GOP), based on (i) a total amount of additional data used for multiplexing the super GOP into the system stream (col.8, ln.48 to col.9, ln.14, Wang's fig.6 discloses the dynamic allocation of bits for calculating the number of bits in the rate control processor for calculating the necessary amount of bits needed to encode a super GOP by applying the MPEG concept of recursive rate control mechanism by adjusting various parameters for multiplexing the super GOP into the multiplexed stream), each piece of the additional data being included in each pack that contains a portion of the super GOP (col.8, ln.48 to col.9, ln.14, Wang's fig.6 discloses the dynamic allocation of bits for calculating the number of bits in the rate control processor for calculating the necessary amount of bits needed to encode a super GOP, in that each piece of additional data that is encoded into a pack, from encoders 620, 630, 640 and 650, is included into the super GOP when multiplexed at element 660), and (ii) calculating the total amount of picture data contained in the super GOP (col.10, ln.47-61, T is the number of target bits in a super GOP).

If calculating bits for a super GOP data can be done, then calculating bits for a GOP can be done. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Wang into Imahashi's system, as a whole, for calculating remaining space of a pack storing the last piece of picture data, based on (i)

a total amount of additional data used for multiplexing the GOP into the system stream, each piece of the additional data being included in each pack that contains a portion of the GOP, and (ii) a total amount of picture data contained in the GOP, and generate as many next start codes as correspond to the remaining space of the pack which stores the last piece of picture data so as to accurately, efficiently encode video image data while maintaining high image quality in order to produce clear, crisp images at the display (Wang's col.2, ln.55-61).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Imahashi (6,438,317) in view of Tanaka (5,991,313).

Regarding claim 22, Imahashi discloses a system stream creating apparatus for creating a system stream, the system stream being a sequence of fixed-length packs (fig.1, output of element 22), each pack storing a piece of either video stream data or audio stream data (fig.1, output of element 22 is a stream that contains data from video stream, output of element 16, or data from audio stream, output of element 17), the video stream data being a sequence of picture data (fig.1, element 16 contains a stream of video data, ie. sequence or group of pictures (GOP)), the audio stream data being a sequence of audio frames (fig.1 and col.6, ln.16-32), the system stream creating apparatus comprising:

a stream data transfer unit operable to extract either a piece of picture data having a size of a payload from the video stream data or an audio frame from the audio stream data and store the extracted picture data or audio frame into a fixed-length pack

(fig.1, element 22 extracts either a piece of picture data from the video stream exiting element 19 or from the audio stream exiting element 20, and element 22 stores the extracted picture data or audio frame into a fixed length pack); and

a transfer control unit operable to control the stream data transfer unit so that a group of audio frames provided through a plurality of channels and having the same presentation time in common are stored in a group of packs which have been generated successively (col.6, ln.33-41; fig.1, element 11 is the CPU or central processing unit that is able to control how the group of audio frames, from elements 17 and 18, are stored and later presented for synchronization so that the audio frames correspond with the respective video frames by matching the corresponding common presentation times so as to present the audio and video of the program in synchronicity).

Imahashi does not specifically disclose during the storage of the group of audio frames, audio stream data is stored in packs with higher priority than the other types of stream data. However, Tanaka teaches that during the storage of the group of audio frames, the audio stream data is stored in packs with higher priority than the other types of stream data (col.3, ln.29-36, Tanaka discloses the first audio data stream is stored first, the second audio data stream is stored second, and the video data stream is stored last inside the multiplexer/deplexer 14 of fig.2, thus, Tanaka discloses the prioritization of storage of audio data). Therefore, it would have been obvious to one of ordinary skill in the art to combine Tanaka's teachings with the system of Imahashi, as a whole, for improving the encoding accuracy and efficiency of video image data transmission so as to produce high quality image display (Tanaka col.1 ln.47-54).

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Imahashi (6,438,317) in view of Yamamoto (5,742,569).

Regarding claim 23, Imahashi discloses a system stream creating apparatus for creating a system stream, the system stream being a sequence of fixed-length packs (fig.1, output of element 22), each pack storing a piece of either video stream data or audio stream data (fig.1, output of element 22 is a stream that contains data from video stream, output of element 16, or data from audio stream, output of element 17), the video stream data being a sequence of picture data (fig.1, element 16 contains a stream of video data, ie. sequence or group of pictures (GOP)), the audio stream data being a sequence of audio frames (fig.1 and col.6, ln.16-32), the system stream creating apparatus comprising:

a stream data transfer unit operable to extract either a piece of picture data having a size of a payload from the video stream data or an audio frame from the audio stream data and store the extracted picture data or audio frame into a fixed-length pack (fig.1, element 22 extracts either a piece of picture data from the video stream exiting element 19 or from the audio stream exiting element 20, and element 22 stores the extracted picture data or audio frame into a fixed length pack); and

a transfer control unit operable to, when a difference between a presentation time of the audio frame and the specified time written in the header of the pack is lower than a certain value (fig.16A and 16B, Imahashi discloses the phase time differences of the audio frame and the video frame difference that illustrate the difference between the

presentation times, wherein the video frame has a header data that includes a GOP header, as seen in fig.6 and col.18, ln.31-36 in that the coding syntax that includes the group of pictures (GOP) header, with associated time stamp or presentation time of the video frame), cause the stream data transfer unit to store the audio frame into the pack so that a group of audio frames provided through a plurality of channels and having the same presentation time in common are stored in a group of packs which have been generated successively (col.6, ln.33-41; fig.1, element 11 is the CPU or central processing unit that is able to control how the group of audio frames, from elements 17 and 18, are stored and later presented for synchronization so that the audio frames correspond with the respective video frames by matching the corresponding common presentation times so as to present the audio and video of the program in synchronicity).

Imahashi does not specifically disclose a header data generating unit operable to write a specified time into a header of a pack, the specified time indicating a time when either a piece of picture data or an audio frame included in the pack is to be input to a decoding apparatus. However, Yamamoto teaches the header data generating unit operable to write a specified time into a header of a pack, the specified time indicating a time when either a piece of picture data or an audio frame included in the pack is to be input to a decoding apparatus (col.9, ln.49-56; Yamamoto discloses that the specific time, ie. system clock reference (SCR), is written or recorded to the pack header, the system clock reference is a specific time that indicates when the piece of video data or audio frame data included inside the pack for telling how the decoder to properly react

for decoding the audio and video information in synchronicity). Therefore, it would have been obvious to one of ordinary skill in the art to combine Yamamoto teachings with the system of Imahashi, as a whole, for efficiently, precisely encode/ decode the audio/video content for high quality reproduction and transmission of audio/video content (Yamamoto's col.2 ln.49-59).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Allen Wong
Primary Examiner
Art Unit 2621

AW
11/13/07